



## **John W. Flannagan Reservoir 2007**



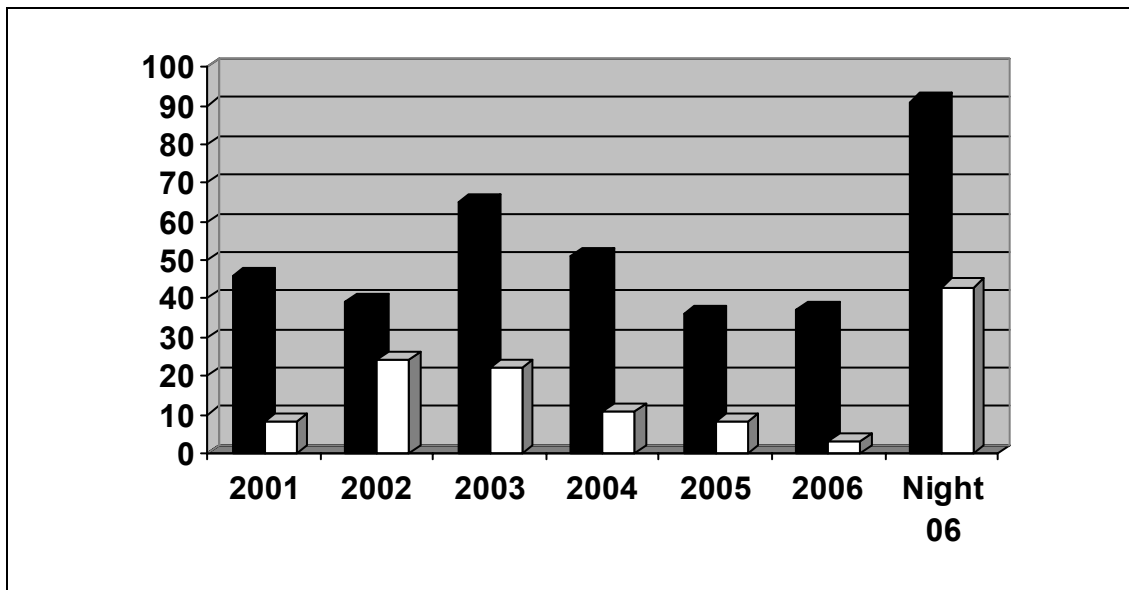
Flannagan Reservoir is a 1,143-acre impoundment located in Dickenson County. The reservoir was built to provide flood control, fish and wildlife habitat and recreational opportunities. The U.S. Army Corps of Engineers completed construction of the dam and project in 1964.

Fifty miles of beautiful shoreline consisting of mature hardwood forest interspersed with spectacular rock bluffs surround this deep, clear reservoir. At full pool elevation of 1,396 feet above sea level, the lake has a maximum depth of 166 feet and an average depth of 58 feet. The lake level fluctuates about 16 feet in a normal water year. The lake is drawn down to winter pool during October and November, and is typically returned to summer pool in April.

Flannagan Reservoir is home to a variety of sport fish species including: largemouth and smallmouth bass, walleye, hybrid striped bass, channel catfish, flathead catfish, crappie, bluegill, rock bass, common carp and musky. Alewives and gizzard shad provide forage for the sportfish populations. Most of these populations are self-sustaining and do not require maintenance stockings. The Department of Game and Inland Fisheries does stock walleye fingerlings (114,300) and hybrid striped bass fingerlings (17,145) each year.

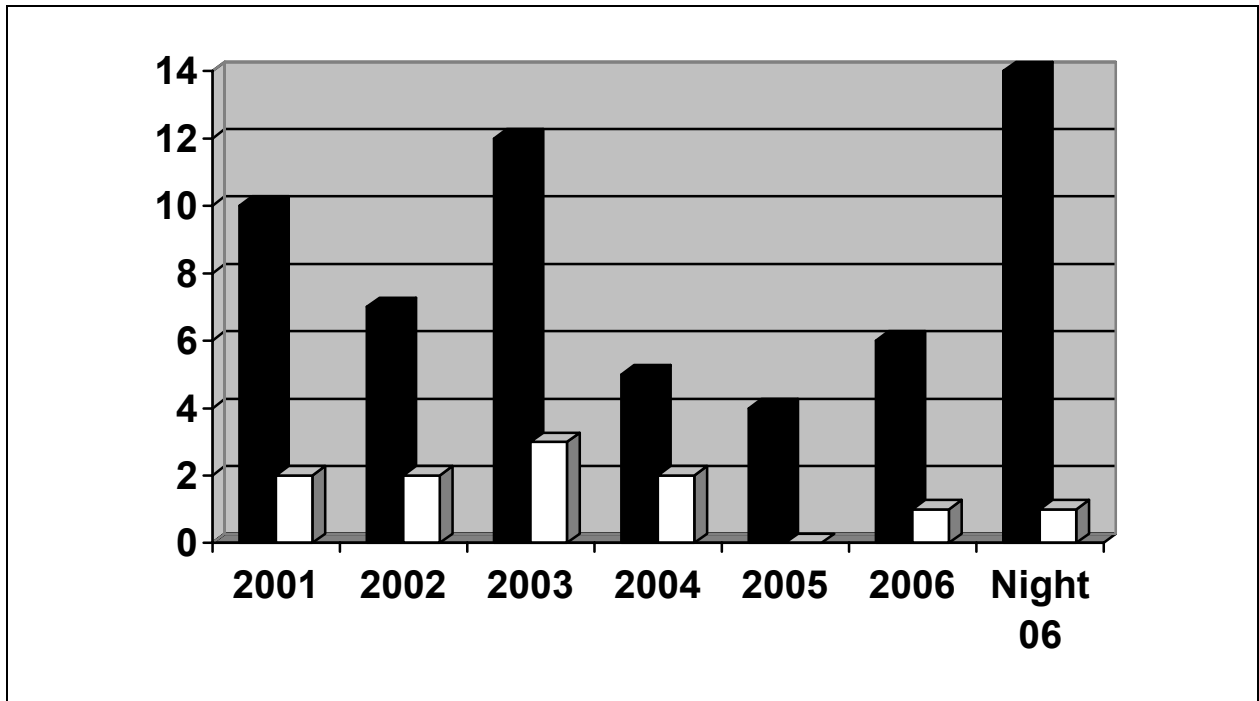
The overall fisheries management goal for Flannagan Reservoir is to provide quality angling opportunities for a diversity of fish species. In order to provide quality fishing opportunities, fish populations need to offer both abundance and good size structure. Abundance is measured in terms of how many fish are collected per hour of electrofishing or per net night of sampling. Size structure is measured by looking at the proportion of adult fish in the sample that are larger than a given size. For example, we consider the proportion of adult largemouths larger than 15 inches, or the proportion of adult black crappie that are over 10 inches. Catch rates and size structure data provide a standardized means of comparing this year's fish sample to last year's catch, as well as to the samples collected at other lakes. Catch rates do not represent the number of fish you might catch while fishing, because you may be more or less effective than the sampling gear. Size structure measures give information about the sizes of fish available in the population. Again, this may not match what you see while fishing, since you might be using gear or techniques that target a particular size range, while sampling tends to collect small and average-sized fish. It is likely that you will catch larger fish than we have collected. These data are best used to track the trends in a population from year to year, or to compare one lake's fish population to another lake's population.

Largemouth is the most abundant black bass in Flannagan Reservoir. Smallmouths are fairly common in the main lake and the Pound River arm, but are collected less frequently in the Cranesnest arm. Sampling catch rates for bass vary from year to year (Figure 1). Some variation can be expected due to fluctuations in water temperatures and weather patterns prior to and during the sampling period. Catch rates for largemouth and smallmouth were down in 2006, as compared to previous years. A night sample was collected in 2006 to compare daytime and nighttime fish distributions. Bass catch rates were much higher at night, but there is no way to determine what nighttime catch rates were in the past. Recent declines in bass catch rates could be just normal fluctuations, but biologists will closely monitor the populations in 2007 to determine if the lower catch rates are a trend.



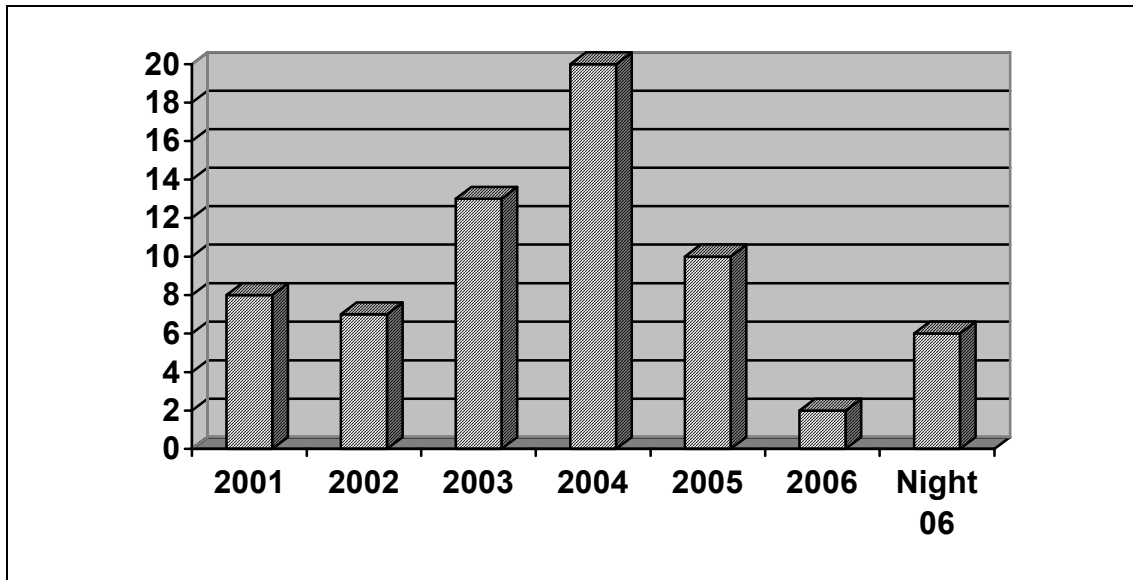
**Figure 1.** Number of bass collected per hour of electrofishing in Flannagan Reservoir 2001 through 2006. Dark columns represent largemouths and light columns represent smallmouths.

The number of preferred size (15 inches or greater) largemouths collected per hour of sampling increased somewhat in 2006. The catch rate for smallmouth greater than 14 inches in length also improved. Higher catch rates in the night sample indicate the presence of more big fish in shallow water at night. This is not unusual in clear water lakes like Flannagan, and is certainly not a surprise to Flannagan anglers.



**Figure 2.** Number of preferred size bass collected per hour of sampling at Flannagan Reservoir 2001-2006. Preferred size is fifteen inches for largemouth (dark columns) and 14 inches for smallmouth (light columns).

The walleye fishery has received a lot of attention since Flannagan Reservoir was designated as a “priority” walleye water in 2000. Walleye catch rates increased substantially, and peaked in 2004 (Figure 3). A fish kill caused by low dissolved oxygen was documented in September 2004. Only a few dead fish were observed on the lake’s surface, but apparently many of the dead fish remained at depth. Sampling catch rates declined sharply in 2005 and 2006. Hopefully annual fingerling stockings will rebuild the population within a few years.

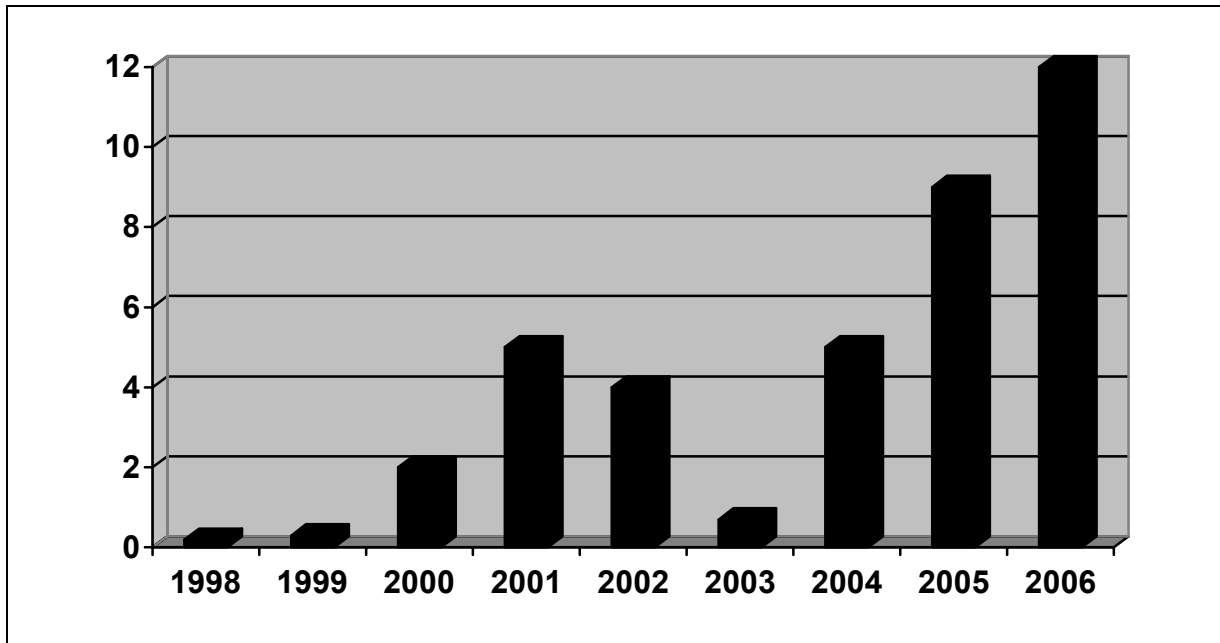


**Figure 3.** Number of walleyes collected per hour of electrofishing in Flannagan Reservoir 2001-2006.

Hybrid striped bass were first stocked into Flannagan Reservoir in 1999. The hybrid fishery has become quite popular in the relatively short period of time since the first introduction. Hybrids are stocked each year as fingerlings (two to four inches). They measure eight to ten inches or more after one year in the reservoir, and may reach 18 inches by their second season. Hybrids over 26 inches long were collected in the 2006 sample. Anglers are enjoying this hard fighting and powerful sportfish.

Since 1998, one fisheries management goal has been to re-establish the black crappie population in Flannagan Reservoir. Biologists have used a multi-pronged approach to accomplish this task. The annual stocking of about 1,000 adult black crappie (6 to 8 inches) from 1998 to 2002 was the first step toward recovery. Habitat enhancement has also played a vital role in the effort. Hardwood brush piles and hinge-trees were placed in the Pound and Cranesnest River arms of the reservoir and in sheltered coves in the main lake. These structures provide excellent spawning habitat and escape cover for crappie as well as other species of fish. A 10-inch minimum length limit was also established to allow crappie an opportunity to spawn for a couple of seasons before being legal for harvest.

There are promising signs that the efforts are paying off. Catch rates for black crappie have increased from one fish every three hours of sampling in 1998 to a high of 12 fish per hour of sampling in 2006 (Figure 4). Size structure of the population is excellent; about 75 percent of the adult crappie collected in 2006 exceeded 10 inches in length and almost 40 percent were longer than 12 inches. Fishing should be very good for the next few years. Hopefully natural reproduction will sustain the population without stocking.



**Figure 4.** Number of black crappie collected per hour of electrofishing at Flannagan Reservoir 1998-2006.

Flannagan also offers some very good fishing for bluegills. Population sampling yields only average numbers and sizes of bluegills. However, anglers frequently report catching very nice bluegills. Some very nice catches of bluegills were recorded in the 2003 angler survey. There are a few hybrid sunfish, sometimes called ‘Georgia Giants’, in Flannagan. These fish grow to enormous sizes. Sunfish over two pounds have been landed in recent years.

Channel and flathead catfish populations provide good fishing opportunities as well. Again, samples yield mostly “average size” catfish, whereas anglers often catch trophy cats. Some huge carp also roam Flannagan’s clear waters, just waiting to test an angler’s skills and equipment. One 32-inch carp collected in 2006 was more than 30 years old.

A residual musky population persists even though none have been stocked in more than 20 years. Natural reproduction has been documented on a couple of occasions. Some young-of-year muskies (about five inches long) were collected in the Pound River arm of the reservoir in 2001. This low-density population should continue to provide some lucky anglers with the fish of a lifetime each year.

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